



Code of Practice - Processing of Poultry

Part 2: Good Manufacturing Practice
Chapter 5: Slaughter and Dressing

Prelims

Amendment 0

December 2007

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Disclaimer

IMPORTANT DISCLAIMER

Every effort has been made to ensure the information in this report is accurate.

NZFSA does not accept any responsibility or liability whatsoever for any error of fact, omission, interpretation or opinion that may be present, however it may have occurred.

Website

A copy of this document can be found at: <http://www.nzfsa.govt.nz/animalproducts/index.htm>

Review of Code of Practice

This code of practice will be reviewed and amended, as necessary, by the New Zealand Food Safety Authority in consultation with poultry processors and the Poultry Industry Association of New Zealand (PIANZ).

Poultry processors, PIANZ or other interested parties may request a review of any part of the code if the need arises.

Suggestions for alterations, deletions or additions to this code of practice, should be sent, together with reasons for the change, any relevant data and contact details of the person making the suggestion, to:

Assistant Director (Production and Processing)
New Zealand Standards Group
New Zealand Food Safety Authority
P O Box 2835
Wellington
Telephone: 04 894 2500
Facsimile: 04 894 2643

Amendment Record

(To be used with hard copy only)

Amendments will be notified on NZFSA's web site and issued to PIANZ for distribution to their members. Other relevant parties may request copies from NZFSA where appropriate.

It is important that this publication is kept up-to-date by the prompt incorporation of amendments. To update this publication when you receive an amendment, remove the appropriate outdated pages, destroy them, and replace them with the pages from the new issue. Complete instructions will be given on the covering letter accompanying the amendment. File the covering letter at the back of the publication and sign off and date this page. If you have any queries, please ask your local Verification Agency.

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1 Purpose and Scope

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1.1 Purpose and Scope

This Code of Practice (COP) describes good operating practices designed to help ensure that the processing of broiler chickens results in products that are fit for their intended purpose.

This COP covers the receipt of live broiler chickens at a processing plant, their primary processing (slaughter and dressing) and some secondary processing activities. It is intended that the scope of this COP will be extended to other poultry types at a later date.

1.2 Status of Code of Practice

This COP contains:

- mandatory requirements;
- procedures for compliance; and
- guidance material (shown in boxes).

Poultry processors must comply with the mandatory requirements.

Poultry processors must comply with the procedures for compliance unless their alternative practices have been approved by the NZFSA.

Any alternative practices must be documented within the poultry processor's risk management programme. Approval for the alternative would be given through registration of the risk management programme, or a significant amendment to a risk management programme, containing those alternative practices (which must be provided to NZFSA at the time of registration).

The guidance material in boxes in this COP is non-mandatory, and is given to help both operators and verifiers interpret NZFSA's expectations.

1.3 Definitions

The following definitions are additional to definitions in the Animal Products Act 1999:

Apparently healthy/healthy refers to a bird that does not show evidence of disease or defect which might affect its suitability for human or animal consumption as judged by a trained ante mortem examiner.

Approved Maintenance Compound means any maintenance compound that is approved by the Chief Executive or listed in specifications under the Animal Products Act 1999.

Broiler means a male or female chicken kept primarily for meat production.

Clean, when used as a verb, means to remove visible contaminants from any surface.

Condemned means unfit for human or animal consumption, and only suitable for rendering or destruction.

End of Lay means a bird bred for egg laying and sent for slaughter when no longer required for that purpose.

Good Operating Practice means documented procedures covering necessary practices required to ensure safety and suitability as appropriate to the operation.

Heavy foot traffic means an area where there is significant movement between areas in a factory or in and out of the facility by many different people (a small number of people moving between work stations in an area does not come within this definition).

Offal means the viscera and trimmings of a chicken removed in dressing operations, that may be used for human consumption or animal consumption.

Partial depopulation means taking some of the live birds from a single shed on a single day. Also known as thinning.

Poultry includes chicken, turkeys, ducks, pheasants, quail, guinea fowl, geese, partridges, poussin, pigeons and other game birds.

Potable water means water that —

- a. in relation to water supplied by an independent supplier (including a public or private supplier), is of a standard administered by the independent supplier under the Health Act 1956 and any regulations made under that Act; or
- b. in relation to water supplied by the operator solely for the use of the operator (such as bore water, rainwater, surface water, or ground water),—

-
- i. is of a standard equivalent to that referred to in paragraph (a), as determined by the operator based on an analysis of hazards and other risk factors; or
 - ii. complies with the requirements in Schedule 1 of the Animal Products (Specifications for Products Intended for Human Consumption) Notice 2004; or
 - c. meets the requirements of the current "Meat Division Circulars 86/3/2 Surveillance of Potable Water in Meat and Game Export Premises" and "86/3/5 Amendment to MDC 86/3/2 86/14/5 on Surveillance of Potable Water in Meat and Game Export Premises" issued by the Ministry (NZFSA).

Primary Processing includes slaughter and dressing of poultry, and associated activities.

Processing Aid means a substance listed in clauses 3 to 18 of Standard 1.3.3 of the Australia New Zealand Food Standards Code, and which is used in accordance with the Standard.

Rinse means to apply water (with or without the addition of processing aids) to minimise visible contamination.

Sanitise means the application of an appropriate processing aid, approved maintenance compound or physical agent to minimise microbial contamination.

Secondary Processing includes any processing beyond slaughter and dressing of poultry, and associated activities.

Total depopulation means taking all of the live birds from a single shed on a single day.

Whole flock health scheme, in relation to a flock of farmed birds means a documented programme of health surveillance and includes, where applicable —

- (a) disease control or eradication; and
- (b) the management of agricultural compounds and veterinary medicines according to any general or specific conditions of use.

2 Regulatory Requirements

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2.1 Introduction

Below is a summary of the legislation under the Animal Products Act 1999 that is most applicable to poultry processing. Web links for documents current at the date of issue of this Code are given. These may become out of date and the summary is not exhaustive. To access all current legislation go to the general link:

<http://www.nzfsa.govt.nz/animalproducts/legislation/index.htm>

It is the responsibility of the operator to be aware of current legislation.

2.2 Summary of Most Applicable Legislation

Animal Products Act 1999:

<http://www.nzfsa.govt.nz/site/exit/legislation/index.htm>

Food Standards Code – Parts 1 and 2:

<http://www.foodstandards.gov.au/thecode/foodstandardscode.cfm>

Animal Products Regulations 2000:

<http://www.nzfsa.govt.nz/animalproducts/legislation/regulations/ap-regulations-2000.pdf>

Animal Products (Specifications for Products intended for Human Consumption) Notice 2004, particularly specifications 4 to 34, 39 to 41, 68 to 76A, 112A to 116 and 143 to 147:

<http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product.htm>

Animal Products (Specifications for Products intended for Animal Consumption) Notice 2006:

<http://www.nzfsa.govt.nz/animalproducts/publications/consultation/submissions/analysis/animalconsumptionspecificationsanalysisofsubmissions.htm>

Animal Products (Specifications for the Ante-mortem And Post-mortem Examination of Poultry Intended for Human or Animal Consumption) Notice 2005

<http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/poultry/poultry-specs.pdf>

Animal Products (National Microbiological Database Specifications) Notice 2007:

[http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/nmd/Animal_Products_\(NMD_Specifications\)_Notice_2007_signed.pdf](http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/nmd/Animal_Products_(NMD_Specifications)_Notice_2007_signed.pdf)

Approved Maintenance Compounds:

<http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/human-consumption/notice-man-15.pdf> and

<http://www.nzfsa.govt.nz/animalproducts/registers-lists/manual15/index.htm>

Animal Products (Contaminant Monitoring and Surveillance) Notice 2007:

<http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/residues/mp-rcs-notice.pdf>

3 Procedures for Compliance

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3.1 General

The Operator must document procedures within their risk management programme covering their slaughter and dressing process(es).

3.2 Equipment

All primary processing equipment which comes into contact with defeathered poultry must be rinsed as often as possible but at least at each break in processing which is greater than 15 minutes long.

Where an antimicrobial is added to rinse water it must be a processing aid used according to the manufacturers instructions.

The earlier rinses occur after steps that could increase contamination the better as prolonged contact allows bacterial attachment to the skin to occur.

Equipment must be fully cleaned and sanitised at the end of each day's operations.

3.2.1 Automated Equipment

Surfaces of automated primary processing equipment that contact defeathered poultry must be rinsed continuously where practicable.

3.2.2 Personal Processing Equipment

Personal processing equipment (including knives and manual hock-cutters) must be rinsed when visibly contaminated, and cleaned and sanitised at least every 3 hours.

The intent of the above clauses is to rinse, or clean and sanitise equipment as often as possible in order to minimise contamination. It is desirable for equipment to be visibly clean. When equipment is visibly soiled, all reasonable attempts should be made to remove this soiling without delay.

3.3 Product Contacting Non-Food Contact Surfaces (Dropped Product)

The contact of poultry product with non-food contact surfaces must be minimised.

Equipment should be designed and operated to avoid product contacting any non-product contact surfaces. Operators should consider it to be unacceptable for product to be dropped on the floor and every attempt should be made to prevent this from happening.

Where product does contact non-food contact surfaces the following corrective action must be taken without delay:

- Restoration of control of processing to stop product dropping (see 3.3.1);
- Disposition of affected product (see 3.3.2); and
- Prevent re-occurrence of the problem (see 3.3.3).

3.3.1 Restoration of Control

Any design or operational fault precipitating the problem must be rectified in a timely manner.

3.3.2 Disposition of Poultry Product

Affected product must be dealt with expeditiously which means immediately if possible.

Affected product must be condemned or, where permitted, decontaminated to make it fit for intended purpose.

Decontamination may be achieved by rinsing or trimming to remove all contamination according to procedures outlined in 3.3.2.1 below. It is not appropriate to place birds anywhere straight back onto the processing line without such decontamination, even if there are effective rinses after that point in the process.

The following unwrapped products must be condemned:

- any offal falling onto the floor;
- any product falling into a drain in any area;
- any coated product, product with a non-meat component (e.g. stuffing bullets) or partially cooked or fully cooked product that contacts the floor;
- any product that comes into contact with the floor outside of normal processing areas;
and

- any product falling onto a high traffic area (heavy foot traffic or handling equipment).

Affected product must be decontaminated to make it fit for intended purpose, or condemned.

Affected product may be rinsed or trimmed to remove all contamination according to procedures below.

3.3.2.1 Decontamination by Trimming or Skinning and Continuous Rinsing

Dedicated wash sink(s) in both primary and secondary processing, with attached trimming table and knife sanitiser must be set up and the lighting at the level required for product inspection. The wash sink is to have running water with an antimicrobial processing aid.

Operators have until December 2008 to meet the above requirement. Alternative control measures may be permitted if operators document them in their risk management programme and submit them to NZFSA for approval as part of the registered programme.

Contaminated product must be kept separate from product that has been decontaminated.

Heavily soiled product must be trimmed or skinned before rinsing. If the product is trimmed, it must have the contaminated site removed without contacting or penetrating the area of contamination. Trimming must be carried out in areas where it will not cross contaminate other poultry or food contact surfaces (unless these surfaces are cleaned and sanitised prior to next use).

The whole bird or portion must be rinsed expeditiously until all visible contamination has been removed. The water must be flowing continuously so that contamination is rinsed away immediately to the drain.

Sealed packaged product that has been dropped must be rinsed expeditiously until all visible contamination has been removed.

3.3.2.2 Removal of Contamination by Dipping

Dipping of whole birds, complete portions or sealed packaged product in processing aids is only permitted for:

- very low throughput operations as defined in the NMD Specifications; and
- other operators until December 2008.

Operators using this method of decontamination must document all parameters that could affect decontamination efficacy including:

- name of processing aid;
- concentration of processing aid;
- contact time on product; and
- monitoring of critical parameters at sufficiently frequency to ensure that the processing aid continues to remain effective.

Validation data must be provided to NZFSA to show that processing aids are used in accordance with the Food Standards Code requirements.

3.3.2.3 Removal of Contamination From Unsealed Packaged Products

Where the packaging of unsealed packaged products has become contaminated, the contaminated packaging must be hygienically removed and replaced. If the product is contaminated, then it must first be decontaminated as per above procedures. Contaminated packaging must be discarded.

3.3.3 Prevention of Re-occurrence

All repetitive faults e.g. equipment design or operational issues, must be investigated and addressed without unnecessary delay to minimise re-occurrence.

3.4 Status of Animals for Slaughter

The Operator is responsible for ensuring that poultry being presented for slaughter have passed ante-mortem examination, and that they have appropriate supporting documentation.

See Chapter 4 for more information (to be written).

3.4.1 Hanging and Ante-mortem Examination

Operators must set a limit for acceptable numbers of “Dead On Arrivals” which if exceeded will result in corrective action.

The operator of a processing premises must ensure that:

- poultry found dead on arrival are recorded, and appropriately disposed of, e.g. destroyed or rendered, and
- moribund, unhealthy or rejected birds are not processed but are killed humanely and appropriately disposed of, e.g. destroyed or rendered.

If the observations made at ante-mortem examination suggest that poultry display symptoms of a notifiable or exotic disease, the operator must contact the Ministry of Agriculture and Forestry's Exotic Disease Response Services (0800-809-966) as soon as possible. The affected poultry should be withheld from slaughter.

Stress has been shown to increase the shedding of enteric pathogens. Operators should provide conditions and handle live birds in a manner that minimises stress.

Full gastro-intestinal tracts are associated with increased spillage and faecal contamination during processing. Withholding of feed (but not water) for 4-10 hours prior to slaughter (including catching and transportation time) has been shown to reduce contamination.

Operators processing birds with pendulous full crops should slow down the line so there is sufficient time for effective crop-removal.

3.5 Slaughter

Slaughtering practices must comply with any relevant Code of Welfare or codes of recommendations and minimum standards issued under the Animal Welfare Act 1999. Refer to <http://www.biosecurity.govt.nz/animal-welfare>

3.6 Bleeding

Bleeding must be substantially completed before scalding in order to reduce the organic matter entering the scald, and also the numbers of red birds.

3.7 Scalding

There must be at least 750 ml of water added to the scald tank per bird.

Where a wetting agent is added to scald water it must be a processing aid used according to the manufacturers instructions.

All scald tanks (irrespective of the nature of processing) must be emptied and cleaned at the end of each day's operations.

Operators must document the scald temperature that they use to achieve effective feather removal and minimise pathogen proliferation.

Temperature control of the scald tank is important as low temperatures result in inadequate removal of feathers and increased survival of bacteria, whereas high temperatures damage the epidermis and may result in undesirable appearance. Sufficient contact time is also important for good feather removal.

When scalding sprays or steam jets are used, they should be sufficient in number and type to maintain an adequate scalding operation.

There are two commonly-used scalding procedures:

Hard scald (Sub-scald): 55 to 60 °C.

- Cuticle (epidermis) is removed – loses colour,
- Excellent for further processing i.e. adhesion of batter and breading,
- Easy picking – damage from pickers limited & few residual feathers
- Increases drying and discolouration of skin.

Soft scald (Semi-scald): 50 to 54.5 °C.

- Cuticle (epidermis) intact,
- Harder to defeather – Extra pickers required may increase skin damage.
- More desirable colour.

3.7.1 Continuous Scalding Systems

Scalding tanks should, be set up so that water is counterflow (in the opposite direction to bird movement) and so that there is an overflow of water out of the scald. Water should be agitated to prevent build up of sediment and scum and to improve penetration of the water to the feather follicles.

There should be at least 750 ml of water added per bird.

3.7.2 Batch Scalding Systems

Where batch scalding is performed, the scald water tank must be emptied and cleaned at every break.

3.8 Defeathering

3.8.1 Pluckers

Defeathering equipment must be accessible for cleaning and for the removal of any accumulated feathers and contamination, and constructed to minimise the scattering of feathers or cross contamination of other poultry processing areas.

Broken plucker fingers must be replaced prior to the next day's processing.

Drum pluckers must be emptied of feathers at least at every break and more often where practicable.

Collection and removal of feathers from the defeathering and scalding areas must be carried out at a frequency and in a manner that minimises build-up of feathers and contamination of the product or processing area.

Continuous rinsing of equipment may be beneficial at minimising micro contamination.

It is recommended that an antimicrobial is used in at least the last half of the plucker.

Defeathering is considered a "dirty" activity and should be physically separated as much as possible from later primary processing activities.

3.9 Post Defeathering Decontamination

After defeathering all birds must be rinsed by a constant spray of potable water before any incision is made.

3.10 Head-pulling

Head pulling equipment must be designed and adjusted to minimise blockage through build up of heads and head contact with the rest of the carcass after removal.

3.11 Hock Cutting

Wherever possible hock cutting should occur before evisceration.

3.11.1 Feet Recovery:

Feet for human or animal consumption must be visually clean and be chilled to 10°C within four hours of removal.

Feet for human consumption must be rinsed with a processing aid which is antimicrobial.

3.11.2 Transfer to evisceration Line

The rehangng operator (also in automated systems where they just check) must rinse hands and aprons at least every break and when visibly soiled.

Feet are usually cut as part of this process.

This is a good first location for PM examination.

3.12 Vent Opening

3.12.1 Automatic Vent Cutting and Drilling

There must be continuous sprays to rinse the:

- equipment, and
- vent area and the rear of the bird.

An antimicrobial chemical should be added to the rinse water.

3.12.2 Manual Vent Cutting

A knife or implement used in a venting operation must not be used to cut any other part of a poultry carcass unless first cleaned and sanitised.

For manual operations, facilities must be provided for rinsing of hands and implements.

3.13 Caecal Sampling

Caecal samples must be taken as per NMD spec requirements.

3.14 Evisceration

Poultry must be eviscerated within one hour of being slaughtered.

The alimentary tract and other internal organs must be removed in a manner that minimises contamination to the rest of the bird.

Operators must document the level of faecal contamination that will result in corrective action, then monitor and record the actual level of faecal contamination and take corrective action when the defined levels are exceeded.

Every reasonable attempt must be made to remove visible contamination. If the defined limit is exceeded then:

- the line must be adjusted as soon as possible or
- line speed reduced to enable better decontamination practices or
- other suitable corrective action such as retraining of operators that eviscerate by hand.

There must be continuous sprays to rinse:

- equipment, and
- the bird.

An antimicrobial chemical should be added to the rinse water.

3.14.1 On-line Automatic Evisceration

Mechanical evisceration equipment must be adjusted to suit the particular size or type of carcass being eviscerated changes, in order to minimise:

- damage to carcasses;
- damage to the alimentary tract and other internal organs;
- incomplete removal of the alimentary tract and other internal organs; and
- spillage from the alimentary tract and other internal organs onto the carcass.

Mechanical evisceration equipment must be rinsed continuously.

If the operator requires a manual back-up for a mechanical venting operation, facilities for the rinsing of hands and implements must be provided.

The most important factor for reducing damage to the intestine is the way that the equipment is maintained and configured for a particular size or type of carcass.

3.14.2 Off-line Manual Evisceration

During a manual evisceration process all utensils, hands, tables, benches and other food contact surfaces must be rinsed in potable water regularly and rinsed and sanitised at every break.

When carcasses are contaminated by faecal, ova or other contamination, rinsing should occur before further carcasses are processed.

Where rinsing is not possible between every carcass, the contaminants and contaminated rinse water must be directed away from all other carcasses as far as practicable.

Each set of viscera must be removed from the bench/table surface immediately after evisceration.

As much waste water as practicable must be ducted to drains.

3.15 Post Evisceration Decontamination

All carcasses post-evisceration must be rinsed by a constant spray of potable water. The resulting carcass must be visibly clean.

The position of this rinse will vary depending on the set up of the operation.

3.16 Cropping

The brush used to clean the probe at the bottom of its movement must be kept clean and in good condition.

3.17 Neck Flap Removal

Neck flaps may be trimmed to remove contamination.

3.18 Post-Mortem Examination

The operator is required to ensure that there are sufficient competent personnel to carry out post-mortem examination in accordance with the specification.

See Chapter 7 for more information (to be written).

3.19 Offal Recovery

3.19.1 Offal Recovery for Human Consumption

Offal for human consumption must be:

- removed, collected and handled in a way that minimises contamination of the offal;
- rinsed using potable water with an antimicrobial processing aid before or during chilling, with continuous cooling to 7°C or colder within 4 hours of its removal from the bird.

Offal must not be placed within a dressed poultry carcass unless the offal is enclosed in a sealed pack or securely wrapped to prevent cross-contamination between offal and carcass.

Ice and water retention must be minimised.

Where water is used to chill the offal, the water must be maintained in sanitary condition by using sufficient overflow, water replacement, or other appropriate mechanisms.

3.19.2 Offal Recovery for Animal Consumption

Offal for animal consumption must be:

- removed, collected and handled in a way that minimises contamination of the offal;
- rinsed under potable water; and
- continuously chilled to 10°C or cooler within 4 hours of its removal from the bird.

3.20 Carcass Rinse

After evisceration, all carcasses must be rinsed in running potable water with at least 0.5 litres per bird and/or a processing aid to remove any remaining visible contamination before undergoing any chilling regime.

Birds that are still visually contaminated after rinsing must, where practicable, be immediately removed from the process line for separate decontamination prior to placing back on the processing line.

Sprays used for poultry rinsing should ensure thorough rinsing inside and outside the carcass.

The water volume/pressure should be sufficient to cover the whole carcass and to remove visual contamination.

Refer to dropped meat section for possible decontamination options.

3.20.1 Draining

Where birds are to be air chilled, excess water and/or ice must be removed from the birds directly after final rinsing, so that Food Standards Code requirements are met and to minimise drip that could lead to cross contamination later in the food chain.

3.21 Primary Chilling

Carcasses must be chilled using immersion and/or air chilling systems to minimise microbial proliferation and handled in a manner to minimise microbial contaminants. Such chilling systems must deliver product at 10°C or less before the product leaves primary processing.

The Food Standards Code requires that the final product must have no more than 1.0 mg/kg (available chlorine) when chlorine is used as a washing agent.

A pre-chill tank using ambient pH corrected water with a maximum of 200ppm total chlorine is sometimes used.

Condensation must be minimised throughout primary processing areas. Where condensation is avoidable through better premises and / or equipment design, modifications must be made to achieve this where practicable. Where condensation is unavoidable, it is expected that corrective action is taken, including cleaning and sanitising any ceilings or overhead structures, and subjecting them to pre-operational inspection and microbiological monitoring to demonstrate that cleaning is effective.

Immediately adjacent areas are those which are within the same room, and within a short distance of the immersion chiller.

Water vapour will only condense onto another surface when that surface is cooler than the temperature of the water vapour, or when the water vapour equilibrium in air, i.e. saturation humidity, has been exceeded. In buildings the internal air can have a high level of relative humidity due to the activity inside it. When warmer air comes into contact with colder surfaces such as cold walls it condenses.

3.21.1 Immersion Chilling

Any immersion chillers must be operated to minimise microbial cross contamination from one carcass to another via the chiller water. Operators must document the operating conditions that they set to ensure that:

- i. water and ice are potable on entry to the chilling system;
- ii. build up of organic matter is minimised (as determined through appropriate monitoring, e.g. visual and/or turbidity);
- iii. processing aids are used as per manufacturer's recommendations including pH control where necessary; and
- iv. the water temperature and flow rate and bird throughput and dwell time are adequate to achieve an internal bird temperature of 10°C or less when exiting from the immersion chiller.
- v. the water is of a volume consistent with good operating practice as described below, or changed at a frequency that ensures that the water meets standards set under (ii) above.

Where chlorine is used, there must be a residual amount of free available chlorine at the point where water exits the final tank.

Operators should aim for 3-5 ppm free available chlorine where the water exits the final tank.

Operators may use a pre or post-spinchill dip with an antimicrobial processing aid to further reduce contamination.

It is recommended that any water that flows from one immersion tank to another is filtered to remove organic material before entering the later tank.

The following water flows are consistent with Good Operating Practice:		
Carcass weight (kg)	Minimum flow (litres/carcass)	*Minimum Flow (litres/carcass)
<2.5	1.5	0.5
2.5 - 5.0	2.5	1.5
<p>*Recommended minimum flow through the final tank when multiple immersion tanks are used.</p> <p>The minimum flow rates (litres/carcass) given above <i>do not</i> include the initial volume required to fill the tank at the start of processing or at any other time the tank is being filled.</p>		

3.21.1.1 Draining

Excess water and/or ice must be removed from the birds directly after immersion chilling, so that Food Standards Code requirements are met and to minimise drip that could lead to cross contamination later in the food chain.

3.21.2 Air Chilling

Air chilling may be done on a continuous chain and/or as static batch chilling (before or after packing). No matter what air chilling method is used, the operator must document the following relevant operating conditions to achieve an internal bird temperature of 10°C or less when exiting from the air chiller:

- Air Flow Rates,
- Air Temperature,
- Humidity,
- Maximum Capacity,
- Product Layout,
- Dwell time.

Air chillers must be cleaned and sanitised at regular intervals.

3.22 National Microbiological Database – Whole Carcass Rinse Sampling

Whole carcass rinse samples must be taken as per NMD specification requirements.